Automotive Grade Linux Developer BoF Session

Embedded Linux Conference

October 27, 2020

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What is AGL?

Collaborating to build the car of the future through <u>rapid innovation</u>

- Open source Linux-based collaborative project
- Hosted at Linux Foundation
- Focused on rapid innovation of vehicle software using the AGL Unified Code Base

Total of 11 OEMs supporting AGL!

Accounts for approximately 60% of worldwide annual vehicle shipments
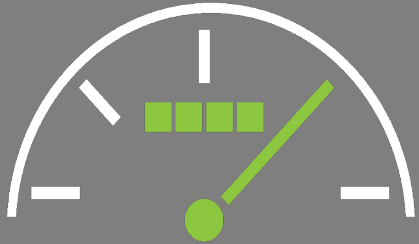
AGL Members - Total of 155 companies!

Platinum

DENSO · MAZDA · Panasonic

RENESAS · SUZUKI · TOYOTA

Gold

HONDA — The Power of Dreams

Silver

AISIN AW CO., LTD. · amazon · Mercedes-Benz

DENSO TEN · DRIMAES · Ford

NTT DATA MSE Corporation · QUALCOMM · SAIC MOTOR 上汽集团

VOLKSWAGEN AKTIENGESELLSCHAFT · WIND RIVER · 蓝星科技

AUTOM GRADE

Bronze

Abalta · ACTIA · Adobe · ADIT · Airbiquity · ALPSALPINE · ARC CORE · ARKAMYS

arm · audiokinetic · Baylibre · BearingPoint. · BedRock Systems Inc. · BIG LAKE SOFTWARE · BlackRidge TECHNOLOGY · BOSCH

BOSE · bright box · Brison · CGISTUDIO · Capgemini · 中国移动 China Mobile · cinemo · cloudbees

Codethink · cognomotiv. · COLLABORA · Continental · CRAVE.io · cybertrust · dellfer · DESAY SV automotive

Elektrobit · ENEA · epam · ETRI · Eureka, Inc. · FIBER DYNE · FORGEROCK · FPT Software

FUJITSU · German Autolabs · GitHub · GlobalLogic · Green Hills SOFTWARE · HARMAN · here · HI CORP.

HITACHI Inspire the Next · HYUNDAI · HYUNDAI MOBIS · ICS · ipw Technologies LLC · igalia · insignary · intel

IOT.BZH · icrdeka · IVIS · JVC KENWOOD · Karamba Security · KERN KONZEPT · kinetica · Konsulko GROUP

KPIT · LEAR CORPORATION · Linaro · LUXOFT · mcloudware · MEDIATEK · Mentor

MICROCHIP · micware · MITSUBISHI · MITSUBISHI ELECTRIC Changes for the Better · Komnac · MontaVista · MOVIMENTO · NEC

Neusoft · NEXIUS · NEXTY Electronics · NIPPON SEIKI · Nuance · NVIDIA · NXM · NXP

NYU · O3IGO · OPENSYNERGY · ORACLE · OTAinfo · OUTCERT · OVO AUTOMOTIVE · PARAGON SOFTWARE

Pioneer · Pocket Soft · RADIO SOUND · SAFENDER · SAMSUNG · STAR LAB · SASKEN

SiFive · SiriusXM · SITECH DEV · SONY · Spireon · STAR LAB · SUBARU · Suntec

SYMBIO · SYNOPSYS · SYSGO EMBEDDING INNOVATIONS · T··Systems · TELENAV · Texas Instruments · Qt The Qt Company · ThunderSoft

TOSHIBA · Total · TREND MICRO · Trillium · TUXERA · Ubiquitous AI Corporation · VENIAM · VeriSilicon

Virtual Open Systems · vnc AUTOMOTIVE · voicebox · wipro · Witekio EMBEDDING SUCCESS · WITZ · Xevo

IUX DATION

AUTOMOTIVE GRADE LINUX

the only organization addressing all software in the car

Infotainment

Instrument Cluster

Heads-up Display (HUD)

Telematics/ Connectivity

Functional Safety

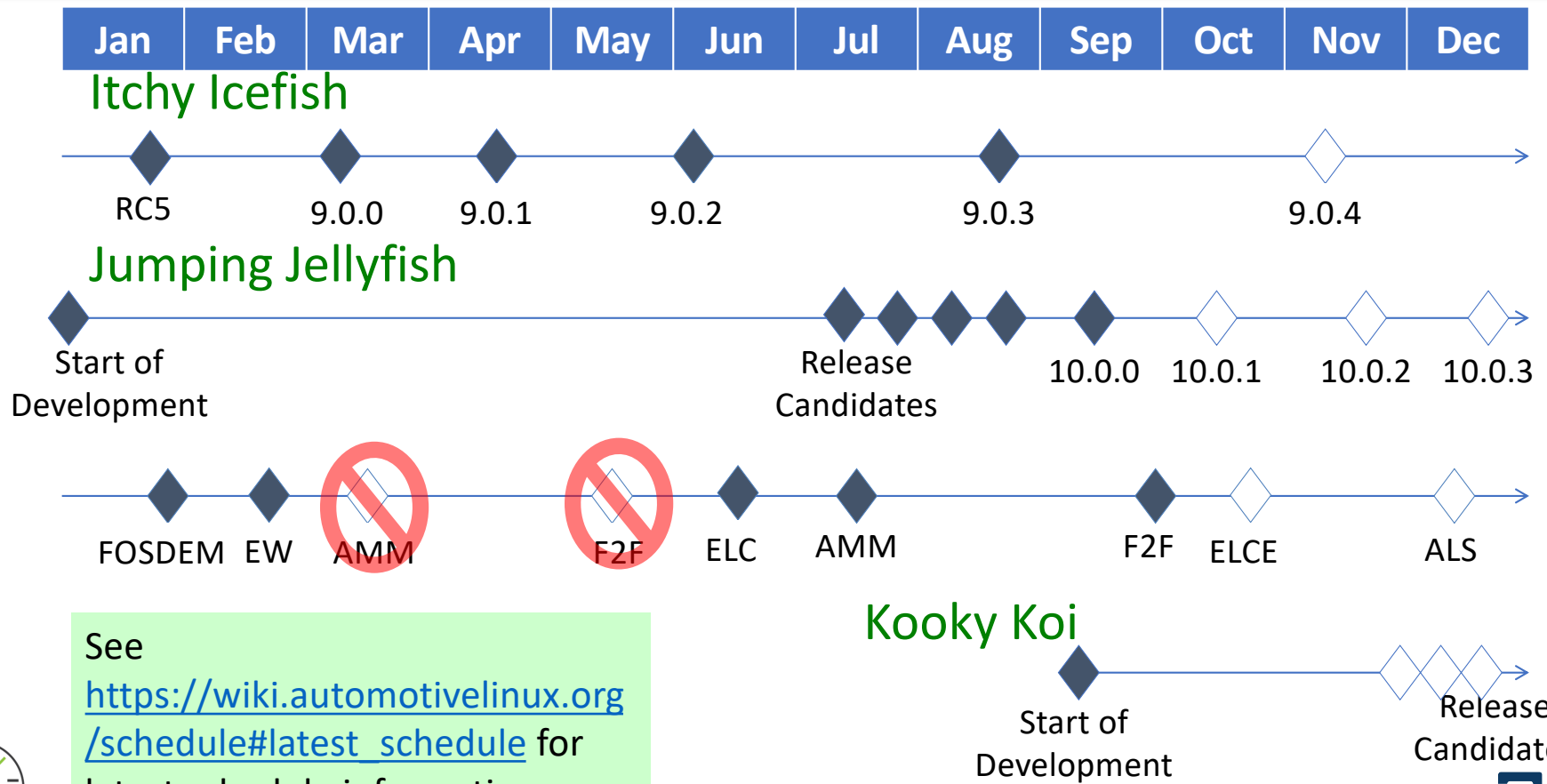Advanced Driver Assistance Systems (ADAS)

Autonomous Driving

AGL Unified Code Base

- Develop a single open source software platform for the entire industry, reducing fragmentation

- Provide at least 70% of the base platform for production projects

- Cultivate an ecosystem of developers, suppliers, and automotive expertise all using a single platform

- Reference hardware and applications available for adaptation

2020 AGL Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Itchy Icefish

RC5   9.0.0   9.0.1   9.0.2   9.0.3   9.0.4

Jumping Jellyfish

Start of Development

Release Candidates   10.0.0   10.0.1   10.0.2   10.0.3

FOSDEM   EW   AMM   F2F   ELC   AMM   F2F   ELCE   ALS

Kooky Koi

Start of Development

Release Candidates

See
https://wiki.automotivelinux.org/schedule#latest_schedule for
latest schedule information

JUMPING JELLYFISH

Jumping Jellyfish

- Uprev to Yocto 3.1
  - Dunfell branch
  - Long-term Support version for Yocto
- Window Manager, Compositor, and Homescreen matches CES 2020 feature set
- New features driven by gap analysis and member donations
  - Evaluate for completeness and platform usability
  - Conversion to new or extending existing AGL binders
  - Test plans

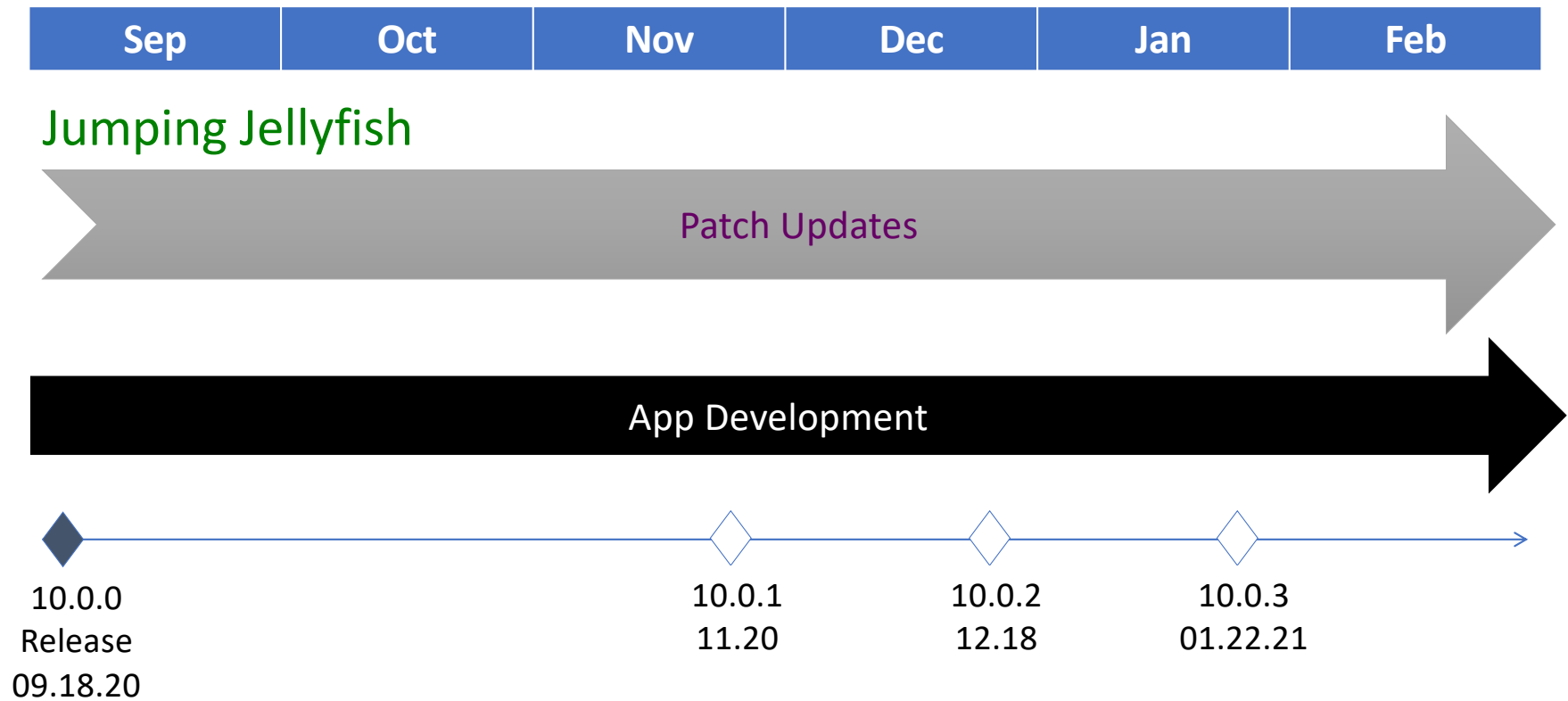# Jumping Jellyfish (w/ YP 3.1)

Feb	Mar	Apr	May	Jun	July	Aug	Sep

Jumping Jellyfish

New Features Developed → Stabilize

App Development

Start of Development
01.15.20

Uprev to zeus complete
03.03

Uprev to dunfell complete*
05.22

Renesas BSP
06.19

RC1**
07.13

RC2
08.04

RC3
09.03

RC4
0913

Final Release
09.18.20
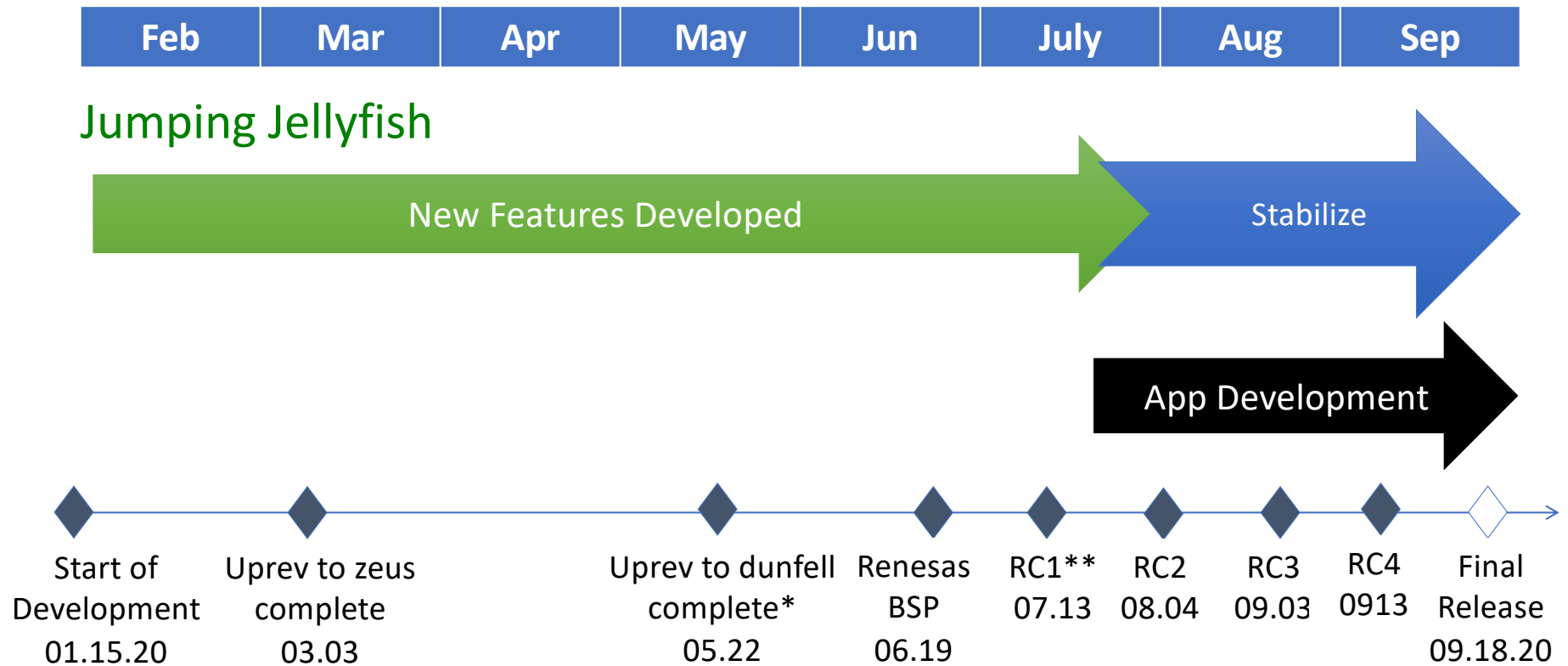
As of 12 October 2020

*No Renesas BSP
** With Renesas BSP

Jumping Jellyfish Patch Releases

Sep	Oct	Nov	Dec	Jan	Feb

Jumping Jellyfish

Patch Updates

App Development

10.0.0
Release
09.18.20

10.0.1
11.20

10.0.2
12.18

10.0.3
01.22.21

As of 12 October 2020
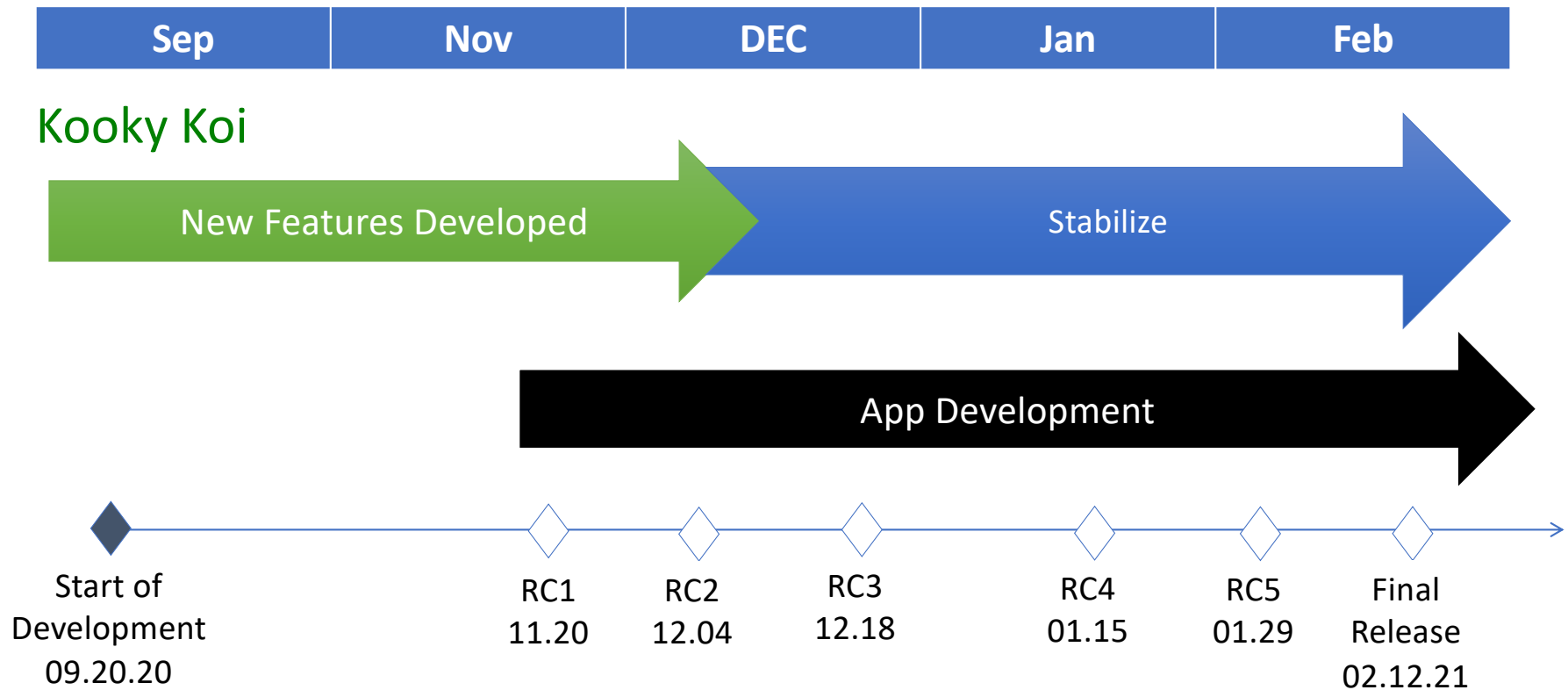
KOOKY KOI

Kooky Koi

- Continue to with Yocto 3.1
- Instrument Cluster containers
- VirtIO
- Rule based arbitration

Kooky Koi

Sep	Nov	DEC	Jan	Feb

Kooky Koi

New Features Developed → Stabilize →

App Development →

Start of Development 09.20.20 — RC1 11.20 — RC2 12.04 — RC3 12.18 — RC4 01.15 — RC5 01.29 — Final Release 02.12.21

As of 12 October 2020

Kooky Koi Patch Releases

Feb	Mar	Apr	May	Jun	Jul	Aug	Sep

Kooky Koi

Patch Updates

App Development

11.0.0
Release
02.12.21

11.0.1
04.03

11.0.2
06.05

11.0.3
07.24

11.0.4
09.04
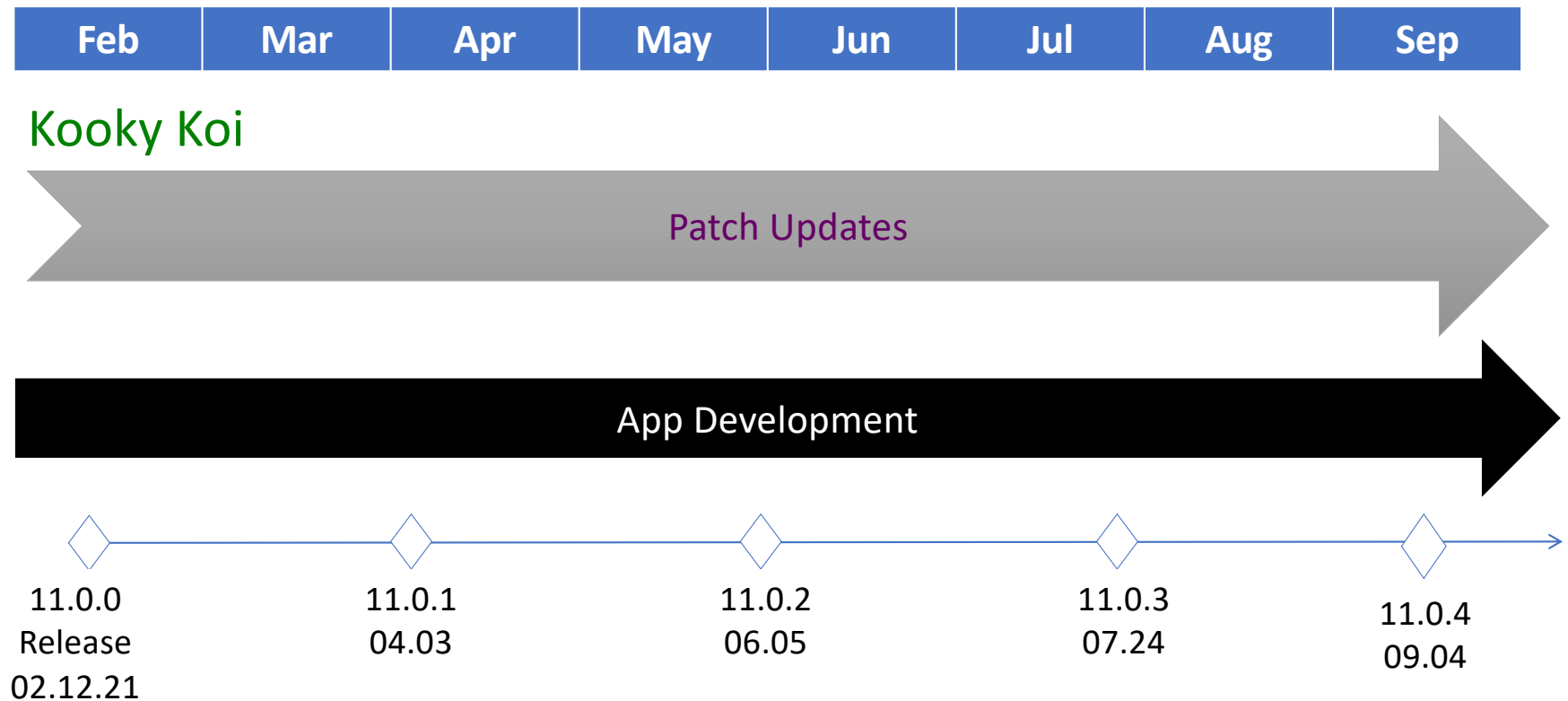
As of 12 October 2020

Active Expert Groups

- Application Framework and Security
- Connectivity
- Continuous Integration and Automated Test
- Virtualization
- Reference Hardware System Architecture
- Speech
- Vehicle to Cloud
- Instrument Cluster
- IVI EG forming to focus on adding more production ready features to the IVI profile.

DEVELOPER RESOURCES

AGL Documentation

- Getting Started
  https://wiki.automotivelinux.org/start/getting-started
- AGL documentation site
  http://docs.automotivelinux.org/
- AGL Wiki
  https://wiki.automotivelinux.org/
- AGL Jira
  https://jira.automotivelinux.org/

Get The Code

- Pre-built binaries and source tar balls available
  - https://www.automotivelinux.org/software/download
- Latest Source Code and Build Instructions
  - https://wiki.automotivelinux.org/agl-distro/source-code
- Release Notes

  https://wiki.automotivelinux.org/agl-distro/release-notes

AGL Code

- AGL gerrit

  http://gerrit.automotivelinux.org/

- AGL git

  https://git.automotivelinux.org/

Ask Questions

- Weekly Developer Call on Tuesdays

  https://wiki.automotivelinux.org/dev-call-info

- IRC channel #automotive on freenode.net

  Discussion about open source software for vehicles. No help for mechanical issues should be accepted from anyone on this channel.

- Dev Community Mail List

  https://lists.automotivelinux.org/g/agl-dev-community

2019 F2F Workshop Update

- Mar 5-7 – Tokyo AGL AMM
- May 7-9 – A Coruña, Spain (Igalia)
- July 16 – Tokyo - Day before Automotive Linux Summit
- Sep 24-26 – Berlin (VW/ Carmeq)
- October 21 - 24 – Monte Carlo – AGL Fall AMM
- Nov 11 – 13 – Karlsruhe and Yokohama – CES Integration Session #1
- Dec 10 – 12 – San Francisco – CES Integration Session #2
- Jan 7-10 : CES 2020

2020 F2F Workshop Update

- Mar 17-19 – Hawaii AGL AMM – Canceled

- May 12 - 14 - Berlin (Mercedes Mbition) - Canceled

- July 15-17 – Berlin AMM – Virtual F2F

- Oct 6 – 8 – Virtual F2F

- Dec 7- 9 – Virtual F2F

Q & A

THANK YOU